

Commander, Navy Region Southwest NAVAL BASE SAN DIEGO, CA

2010 SECRETARY OF DEFENSE ENVIRONMENTAL AWARDS SUSTAINABILITY - NON-INDUSTRIAL INSTALLATION NOMINATION

INTRODUCTION

Naval Base San Diego (NBSD) encompasses the NBSD main-site, the Broadway Complex in downtown San Diego, the Mission Gorge Recreation Center, the Naval Medical Center San Diego at Balboa Park, and 16 family housing sites. NBSD main-site occupies approximately 1,478 acres of land and 326 acres of San Diego bay, with 12 Piers and two channels offering 56,616 feet of berthing. NBSD has an on-base population of 29,000 military, Federal civilian, and contracted employees. NBSD is divided into two distinct areas: the maintenance and repair area along the shoreline (wet side) and the community facilities complex east of Harbor Drive (dry side). NBSD supports 56 ships, and 156 tenant commands. NBSD is also home to Military Sealift Command, Maritime Administration, and U.S. Coast Guard ships, as well as numerous other U.S. vessels. In addition, NBSD provides services including housing, security, public works, environmental, supply, and administrative facilities for tenant units.

San Diego is America's sixth largest city and has become home to technology, telecommunications, and biotechnology companies. San Diegans take tremendous pride in their community and the local environment. In the spirit

of community partnership, NBSD is a vigilant caretaker of its property, steadfast in compliance with environmental laws and regulations. NBSD has assumed this responsibility with an aggressive compliance oversight program and has developed superior relationships with San Diego's elected officials and the regulatory community.

BACKGROUND

Environmental Aspects NBSD manages 69 San Diego Air Pollution Control Board (APCD) permitted sites and/or equipment, 44 San Diego County Department of Environmental Health permitted hazardous waste (HW) collection sites, nine underground storage tank (UST) permits, 11 Food Establishment Wastewater Discharge permits, an Industrial Wastewater (IWP) permit, and two National Pollution Discharge Elimination System (NPDES) permits (one for the facility industrial sites and one for the graving dock). In the past fiscal year, NBSD has had 195 site visits by six different regulatory agencies with no Significant Non-Compliance (SNC) or High Priority Violations (HPV).

Sustainability NBSD has worked to define the principles of intelligent shore design to effectively and efficiently meet projected Fleet requirements. Intelligent

shore design analyzes requirements with regards to consolidation of like-services, demolition of inefficient structures, security enclaving, energy independence/assurance, and Navy as a Top 50 workplace and community leader in environmental stewardship.

Green Procurement Program

Following Executive Order and SECNAV energy guidance, NBSD shaped an aggressive energy and green campaign designed to drive down the consumption of utility commodities and establishing the Navy as a Global Force for Green. Cumulative NBSD efforts saved the Navy nearly \$482K across all commodities. As a result, NBSD was awarded \$147K rebate dollars from San Diego Gas and Electric for energy innovation projects. These cost savings inspired emulation of efforts across the entire CNIC enterprise also earning recognition by OPNAV and PACFLT staffs.

PROGRAM SUMMARY

NBSD's goal is to be the leader in facility support, innovative business practices, environmental stewardship, and community interaction through a professional workforce trained in the latest technological advances and with the systems and infrastructure in place to support technological advances.

In 2010, NBSD funded and executed numerous projects to reduce water and energy use. These projects are achieving a positive return on investment through reduced grounds contracts and reduced energy consumption. In addition, NBSD has continued to execute an aggressive

demolition program to reduce maintenance costs and effectively utilize existing infrastructure. NBSD has also increased efficiencies and improved space usage through relocation and consolidation of commands.

ACCOMPLISHMENTS

PROCESS MODIFICATION OR IMPROVEMENT

NBSD's CBH, in preparation for the Angelley Hall renovation project, transferred all furniture and collateral equipment to NBSD Sustainable Property coordinator for further reutilization by other commands while diverting over 165, 500 lbs of material from the landfill.

NBSD improved the efficiency of the steam system by replacing approximately 1,500 feet of old steam piping and valves, reducing steam leaks to the environment and wasted energy.

NBSD shutdown an aging central LP air system, substituting stand-alone energy efficient compressors that reduced diesel exhaust emissions and saved PACFLT \$61K as well as saving NAVFAC nearly \$17.5M in SRM costs to repair the system.

COMPLIANCE WITH E.O. 13423

NBSD, in cooperation with Clean Harbors and the Fleet Industrial Supply Center (FISC), hosted a one-day hazardous material and hazardous waste turn-in event open to both afloat and shore commands. The first of its kind in NRSW, this event recycled over six tons of hazardous materials and

waste representing over 700 individual line items, thereby meeting the goal of reducing and minimizing the quantity of toxic and hazardous chemicals and materials acquired, used, or disposed of.

NBSD's building inspection program raised awareness of utility usage, inspiring the NMCI Computer stand-by mode initiative that has potential to save \$290K annually (2M KWH) aboard NBSD and \$1.2M (8.5M KWH) across NRSW.

NBSD has pursued a Shipboard Resource Efficiency Program (SREM) that has increased awareness of shipboard pierside electrical usage through "best energy management practices", resulting in a 20% MBTu reduction (\$2M savings) to PACFLT with high potential for greater savings in future years.

NBSD demolished 11 buildings with a total area of 178,558 square feet and an estimated annual savings of \$62K in utilities and \$507K in SRM.

The NBSD TIP program is the largest on the West Coast and at the forefront of alternative transportation, and it continues to explore ways to reduce traffic congestion in and around the base. In collaboration with MTS & SANDAG, NBSD implemented the "Murph Express" bus service from off-base housing to the base and developed carpooling programs to reduce vehicles on the waterfront. The NBSD Transportation Incentive Program (TIP) won the prestigious SANDAG Ridelink 2010 Diamond Award for Innovation.

Naval Base San Diego has established an EMS program and has identified significant aspects within the NBSD footprint. NBSD designates an environmental aspect as "significant" when it is determined to have a significant potential impact on the environment or on base operations. NBSD has also established objectives and targets with achievable and measurable milestones. NBSD's EMS program received its external audit 18 May 2009 and received its EMS Declaration of Conformance Memorandum 21 July 2009. NBSD's EMS program is in full conformance with EO 13423 and ISO 14001.

Training is fundamental to the effective and efficient implementation and execution of the NBSD EMS. Therefore, NBSD conducts two types of EMS training monthly: Basic Environmental Awareness Training for personnel in NBSD work-centers whose work has been determined to have or contribute to a significant environmental impact, and EMS Training for supervisors and inspectors.

COMPLIANCE WITH E.O. 13514

NBSD awarded 227K square feet of Xeriscape projects vastly improving base appearance and saving approximately 7.5M gal of water and \$88K annually in water and maintenance. This initiative also eliminates the use of lawn care chemicals that otherwise would constitute runoff to the San Diego Bay. In addition, NBSD installed weather based irrigation controllers saving 4.6M gal of water and \$23K annually.

ARRA projects installed photovoltaic systems on three base buildings providing an electrical generating capacity of 352 MWH and saving \$51K annually.

NBSD is establishing the path to “Net Zero” energy use on the base with a proposed conversion technology Enhanced Use Lease municipal waste plant that uses trash as fuel to create energy on NBSD. The goal is to establish a waste-to-clean energy conversion technology plant prior to the closing of the San Diego County landfill on MCAS Miramar by FY17. NBSD also initiated a pilot project to determine the feasibility of installing a cutting edge technology anaerobic digester at the Galley that will recycle food waste and produce energy for use in the facility.

To improve At-Berth Support, NBSD is installing six solar- powered trash compactors to replace 45 regular dumpsters to better support ship trash offload. This initiative saves \$17,456 per year in trash collection costs, uses solar energy and maximizes recycling efforts.

NBSD diverted 20,669 tons (100% increase) of solid construction and demolition waste from the municipal landfill, producing \$442K in cost avoidance while achieving a phenomenal 85% diversion rate.

NBSD is working to reduce the carbon footprint by transforming NBSD into a pedestrian friendly base with walking paths, bike lanes, and bike racks as well as promoting a “Plant a Tree” program on the base.

Promoting responsible elimination of environmentally unsafe clutter of afloat and ashore work centers and working toward becoming A Global Force for Green, NBSD hosted four Electronics and Appliance Recycling events in a cooperative effort with Defense Reutilization and Marketing Office, Clean Harbors, and Sustained Solid Waste where over 52 tons of electronics and 20 tons of appliances were received and processed, accounting for 1,800 individual line items with a resale value of over \$1M. An added green benefit: electronic equipment that could have ended up in a hazardous waste landfill was diverted to schools for refurbishment and reuse throughout the country and unusable items were recycled, saving thousands of dollars in disposal costs. Due to the resounding success of these events, NBSD developed a “How To” guide that serves as a reference for other military installations when hosting similar events throughout the United States and overseas.

During its main store remodeling project, NEX recycled over 2,700 tons of material, and will save 40K gallons of water per year with waterless urinals and \$21K per year through use of LED lighting.

A new \$2.2M Synthetic Softball Field project - “Surface Warrior Park” - provides excellent athletic facilities, and will save over 1.3 M gal of water and \$50K in maintenance per year.

RECYCLING PROGRAM

The Integrated Solid Waste Management Program (ISWMP) at Naval Base San Diego (NBSD) utilizes

the EPA's disposal hierarchy to influence how every pound of solid waste generated on the installation is managed. The ISWMP is made up of several divisions, all determined to reduce the amount of solid waste taken from NBSD to the local landfill while utilizing the diverted material in the most environmentally sustainable manner.

The NBSD ISWMP operates a robust Qualified Recycling Program (QRP) that collects, processes, and sells eligible recyclable materials diverted from the Municipal Solid Waste (MSW) stream. QRP materials include office paper, newspaper, cardboard, glass and plastic bottles and cans, pallets, scrap metal, toner cartridges, etc. In addition to the recyclable materials diverted from the landfill directly by the QRP, MSW has been diverted from on base programs such as DECA, NEX, and DRMO.

The largest volume of solid waste generated on most installations comes from construction and demolition (C&D) projects. In FY 10 Naval Base San Diego diverted 20,669 tons of solid construction and demolition waste from the municipal landfill.

Refuse generated at NBSD is disposed of without fee at the City of San Diego operated Miramar Landfill. This landfill is scheduled to close in 2012, requiring NBSD to plan and fund for disposal of refuse at a yet to be determined disposal site. Disposal will no longer be without fee. CNRSW has been provided the opportunity to partner with the State of California and the University of California, Los Angeles (UCLA) to develop a clean-energy partnership resulting in the use of energy conversion technology as an alternative to

landfilling municipal waste. This partnership is expected to determine the feasibility of constructing a Waste to Clean Energy facility capable of accepting refuse from NBSD while generating energy available for on base use.

EDUCATION, OUTREACH, AND PARTNERING

Leading by example to chart the way ahead toward a greener base and environment, NBSD hosted the first NRSW Environmental Green Summit. Featuring both Navy and private enterprise representatives, the Summit provided a venue to share information on a wide array of conservation, green projects, and Navy-private enterprise partnerships.

NBSD showcased its environmental initiatives at the Port Tenants Association Operation Clean Sweep (OCS) After Party. OCS is a San Diego Bay cleanup partnership between the Unified Port of San Diego and the Navy.

REDUCTIONS ACHIEVED

NBSD established its Smart Landscape Master Plan in 2007. Artificial turf, xeriscape, and master irrigation control systems, to date, have saved more than 60 million gallons of water and will continue to save an estimated 20.7 million gallons annually.

Additional water conservation measures include installing low-flow shower heads, replacing 190 urinals with one-pint flushing types, and installing 100 waterless urinals, which are estimated to save approximately 3.8 million gallons of water each year.

In 2010, NBSD completed its Photovoltaic Projects. These solar energy systems are expected to generate approximately 570 MW.

In 2010, NBSD replaced 1,182 lights with Light Emitting Diode (LED) technology. Existing 400 W fixtures were replaced with 110 W LED fixtures. This project reduced electrical consumption by 945.4 MW.

NBSD is reducing carbon emissions by encouraging personnel to use van pools, car pools, bus routes and trolleys through its Transportation Incentive Program.

The NBSD Recycling Center saves approximately 15 tons of solid waste daily.

On Earth Day, 2010, NBSD, in cooperation with metro-San Diego commands diverted more than 42 tons of electronic and 12 tons of appliance waste from landfills.

NBSD's Excess Hazardous Material/Waste Turn-In Event diverted 7 tons of waste from landfills.

To manage energy conservation, the base has begun a process to enable standby mode for unattended computer work stations.

Soiled shop rags from ships and other activities are cleaned and re-issued free, eliminating another waste stream.

On July 2010, NBSD unveiled new synthetic softball fields. The fields are composed of artificial turf, reducing water usage. The savings from this

project alone is 1.3 million gallons of water a year.

A Shipboard Resource Efficiency Management Program was established to educate fleet units in tracking utilities. Through this program alone, the Navy saved an estimated 5.6 million British Thermal Units.

MASTER PLANNING AND GREEN BUILDINGS

NBSD is developing the Global Force for Green concept and, advancing new innovative Green Construction technologies in DoD, NBSD has proposed construction of a "Green, Net-zero" building as opposed to traditional construction to replace a World War II-Era Fleet Family Support Center.

As a cost effective development decision, NBSD proposed "LCS Country", consolidating all LCS training, administration, and logistics shore activities into a single 450K square foot existing footprint instead of new footprint MILCON. The plan saves about \$205M in MILCON cost avoidance, \$467K in BOS, and provides operational benefits to the fleet, increased unit cohesiveness and security, manpower efficiencies, and surge capacity.

The Angelley Hall BQ Renovation Project, supporting Homeport Ashore Sailors, will completely renovate the BQ using green technology such as grey water irrigation and energy efficient HVAC systems.

All new buildings on NBSD will be LEED Silver certified in order to advance green technology.

NARRATIVE SUMMARY

NAVAL BASE SAN DIEGO, CA

NBSD has significantly reduced its impact of operations on the environment. The introduction of new ideas and equipment which reduce waste, capture pollutants, and otherwise mitigate environmental impacts at NBSD has led to regulatory compliance in all areas of NBSD activities. Summary of achievements:

- NBSD diverted 20,669 tons of solid construction and demolition waste from the municipal landfill, achieving an 85% diversion rate.
- Initiated 227K square feet of Xeriscape projects, vastly improving base appearance and saving approximately 7.5M gal of water and \$88K annually in water and maintenance.
- NBSD demolished 11 buildings with total area of 178,558 square feet with an estimated annual savings of \$62K in utilities and \$507K in SRM.
- Held several electronic waste turn-in events that resulted in the recycling/re-use of electronic items and appliances and a savings in disposal costs.
- Hosted a one-day hazardous material and hazardous waste turn-in event open to both afloat and shore commands. This event recycled over six tons of hazardous materials and waste.
- NBSD hosted the first NRSW Environmental Green Summit featuring both Navy and private enterprise representatives. The Summit provided a venue to share information on a wide array of conservation, green projects, and Navy-private enterprise partnerships.